KLING & FREITAG

CA 106

User's Manual

Version 5.1
Released: 08.11.2006

Important Informationen, Please Read Before Use!

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KLING & FREITAG
SOUND SYSTEMS

Thank you for your decision to buy a KLING & FREITAG product. To guarantee a trouble-free operating of the equipment and to enable the KLING & FREITAG CA 106 speaker system to achieve its full potential, please read the operating instructions carefully before use.

With the purchase of a CA 106 System, you have acquired a speaker system with the highest possible quality and performance capabilities.

As the owner of this system, you now have a versatile and highly professional tool which, when operated properly, is a true pleasure to use.

Symbols in User's Manual

Warning	This symbol indicates the possibility of life-threatening danger and a health risk for persons. Not following these instructions may result in serious health problems including potentially fatal injuries.
Caution	This symbol indicates a possibly dangerous situation. Not following these instructions may cause minor injuries or property damage.
Important	This symbol gives instructions for the proper use of the described products. Not following these instructions may cause malfunctions or property damage.

Information about this User's Manual

User's Manual CA 106 Version 5.1, 08.11.2006

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All specifications in this manual are based on information available at the time of publishing for the features and safety guidelines of the described products.

Technical specifications, measurements, weights and properties are not guaranteed. The manufacturer reserves the right to make product alterations within legal provisions as well as changes to improve product quality.

All persons who use the speaker system must have this guide and all further information for safe operations available to them during assembly, disassembly, and use.

We appreciate any input with suggestions and improvements for this manual. Please send this to us at the following address:

info@kling-freitag.de or to:

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1. General Safety Instructions for Using Speakers

Mounting the speakers

To prevent injury, this equipment must be securely placed on the floor or secured to the wall according to the mounting instructions on page 10 (Mounting Instructions for Loudspeakers). Please note that speakers can move as a result of vibrations. To prevent them from falling from their mounted position, they must be secured properly.

Speakers may only be mounted to wall and ceilings by qualified personnel. The speakers must be hung by using at least two of the designated flying points. The same applies when lifting and aligning the speakers.

Never use signal cables or power cords for suspending, aligning or securing the systems. When laying the connecting cables, make sure that nobody can trip.

For mobile and fixed installations, use only assembly equipment from KLING & FREITAG.

Ensure that all installation connections comply with the applicable safety guidelines and that the size and strength are sufficient. Further instructions are in our user's manual for assembly equipment and in the general safety instructions for speakers and assembly equipment.

For mobile and fixed installations, use only assembly equipment from KLING & FREITAG. Make sure to observe the included safety and mounting Instructions for loudspeakers and accessories.

Speakers and rigging equipment must be visually examined at regular intervals. If there are signs of wear, they must be replaced immediately. Furthermore, screwed connections of supporting parts must be checked routinely.

Protecting the speakers / avoiding fire hazard

In general, audio signals should not be overdriven. This may be caused by mixing consoles, equalizers, effect equipment, etc. and should be indicated on this equipment. When a power amplifier is overloaded at the output (clipping), then the amplifier should activate a clipping warning signal. Power amplifiers can also be overloaded at the input circuit without the amplifier signalling the clipping, i.e. when there is not sufficient headroom in the input circuit. We, therefore, recommend turning up the power amplifiers all the way and adjusting the level before the power amplifier in order to avoid overloading the input circuit. In any case, the signal must be reduced as soon as it sounds unnaturally distorted.

- To protect the speakers from being destroyed and to avoid fire hazard, they should only be operated with professional power amplifiers with the following specifications:
  - Integrated or preceding subsonic filter (approx. 20 Hz, min. 12 dB / octave)
  - integrated clipping limiter
  - maximum rated power 250W@16Ω (equivalent 1000W@4Ω)
- If you wish to use a speaker with a power amplifier which does not fulfil these specifications, then the speaker should be controlled using a Kling & Freitag system controller with limiter function. This is the only way overloading and that the risk of fire can be avoided. The results of such a power amplifier defect of cannot be avoided by the controller.

- If power amplifiers have power ratings lower than mentioned above, then it is imperative that a clipping limiter is used to protect the speaker even if it is used with a Kling & Freitag system controller.

For damage caused by overloading or use with power amplifiers other than those recommended above, Kling & Freitag GmbH does not assume warranty and excludes liability for possible consequential damage.

The following signals may damage the speakers

- permanent high-pitched signals with high frequency and continuous noise from feedback.
- permanently distorted signals with high power.
- noises, which occur when the amplifier is on while equipment is being connected, disconnected or switched on.

Do not install devices in any of the following places:

- where the devices are permanently exposed to direct sunlight
- where the devices are exposed to high moisture or rain
- where the devices are exposed to strong vibrations and dust.

Damage caused by the speakers' magnetic fields

Speakers are permanently surrounded by a magnetic field, even when they are not operating. Therefore, during transport and placement of the speakers, it is important to ensure that there is always approx. 1 m between the speakers and magnetic data media and computer/video monitors.

Preventing hearing damage

To prevent the risk of hearing damage, avoid being too close to operating speakers, even if the volume level seems to be low enough. In general, volume levels over 90 dB can cause hearing damage.

2. CA 106 Product Descriptions and Versions

Short description:

Compact 2-way full-range loudspeaker system with 6.5" low-mid chassis and 1" high frequency horn on a rotatable 90° x 60° CD horn. Homogeneous coverage and constant directivity starting at 1.5 kHz. Integrated crossover with self-resetting protection circuit for low-mid and high frequency way.

Enclosure:

Trapezoidal enclosure with monitor and cluster angles, 12 mm birch plywood, highly stressable structured black, grey or white finish, 2 x M6 and 8 x M8 thread inserts, compatible with various mounting accessories, highly permeable, ball proof steel grille with exchangeable black acoustic foam.

The CA 106, with its compact construction and, at least in the standard version, its light weight, is eminently suitable for mobile use, where it has already proved itself. Its discreet design also makes the CA 106 suitable for fixed installations.

Special versions:

- CA 106-100V: Version with 100V / 50 VA / 100 VA / 150VA toroidal transformer
- CA 106 'Outdoor Installation'
- CA 106 'Outdoor 'Mobile'
- CA 106 'shielded', magnetically shielded, equipped with lightweight Neodymium chassis
- Special finish in RAL colours

3. Important Notes for the Option 'Outdoor Mobile'

The CA 106 is available with the option 'Outdoor Mobile'.

Speakers with the option ‚Outdoor' have been optimised for outdoor use. They withstand temperature fluctuations in moderate climate zones and do not accumulate condensation water.

In order to guarantee the longevity and safety of the speakers, the speakers with the option 'Outdoor' must still be protected from direct effects of the weather.

They should be installed, for example, under a roof so that they also have sufficient protection from driving rain from the side and direct sunlight.

3.1 Features of the Option 'Outdoor Mobile'

Version for mobile outdoor use under roofs.
Features like standard version but with the following extras

- multi-layered, temperature and UV-resistant high-tech PU marine primer,
- final coating with highly resistant structured 2K paint in RAL colours,
- waterproofed diaphragms and electronic components protected against corrosion with protective coating.

4. Instructions for Versions with '100 V' Option

Kling & Freitag speakers are fitted with high-quality toroidal transformers. This serves to minimize loss of sound. Highly professional sound reinforcement results can be achieved using 100 V Kling & Freitag speakers.

4.1 Reasons for choosing Speakers with 100 V Technology

– Reduction in conduction loss.

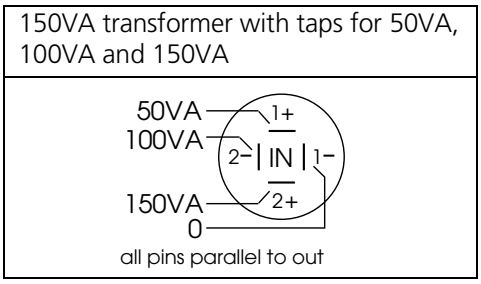
– Easy assembly of a loudspeaker network due to simple parallel wiring.
The sum of the output power of the individual speakers (stated as VA = W) must not exceed the output power of the 100 V amplifier.

– Speakers are galvanically isolated.

– Speakers can be integrated into existing 100 V systems.

4.2 Connecting Diagram of the 100V Speaker Inputs

The 100 V transformer for the CA 106 has 3 taps. These enable the speaker to be operated at 50 VA, 100 VA or 150 VA. Which tap is connected to which pin can be seen below.



5. Instructions for Suspending the Speakers

The speakers may only be suspended by trained specialised personnel.

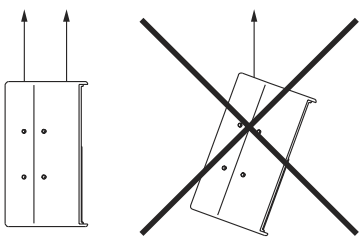
Please follow the accompanying safety and assembly instructions carefully as well as the required safety factors. Pay attention to the corresponding national safety regulations.

Speaker systems, whether single or connected to one another, must always be secured to a second separate point.

Ensure that all connections are secured to prevent their detaching on their own and that only admissible statically tested and sufficiently sized connecting devices, ropes and chains are used.

The M6 threads may only be used in combination with the speaker mount 'Omnimount 50'.

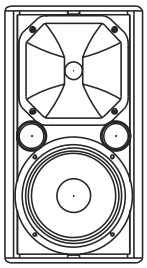
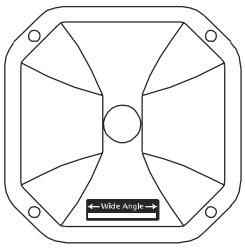
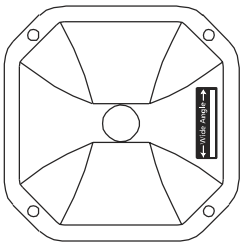
A maximum load of 10 kg may be suspended from the two flying points (M8 thread inserts) of one Speaker. **This means a maximum additional load of 5 kg on each flying point.**



6. Coverage Angles of the CA 106 Speaker

The CA 106 can be operated in a vertical or horizontal (i.e. as a stage monitor) position. The coverage pattern of the speaker can be adapted to special needs by a 90° rotatable horn.

The table below shows the coverage angles of a standing speaker: To determine the coverage pattern of the high frequency horn, shine a flashlight through the front covering at the level of the horn. You will find a silver stripe that determines the position and thus the coverage angles of the horn.

DEFINITION:	**Horn not rotated**	**Horn rotated**
		
Standing speaker	Coverage angles: 90° h x 60° v	Coverage angles: 60° h x 90° v

6.1 Changing the Coverage Angles

To turn the horn, follow these steps:

1) Remove the two grille mounting screws on the top and bottom of the speakers with a 2.5 mm Allen key and remove the grille from the speaker enclosure.
2) Remove the four screws from the high frequency horn (also using a 2.5 mm allen key). Loosen the high frequency horn by using both hands, palms to the outside, to grasp into the horn and lift the horn with even pressure from the palms of your hands towards the outside. Never use a screwdriver or similar objects to reach behind the edge of the horn, as this could damage it.
3) Rotate the horn 90° and screw the horn on tightly again (do not force it!).
4) Screw the grille on tightly.

If the coverage angle needs to be changed often, make sure that the horn is not always rotated in the same direction, as the connecting cables, when twisted, may cause the contacts of the driver to become loose.

7. Mounting Instructions for Loudspeakers

Mount the speakers securely. To avoid injury or damage, always be sure to mount the speakers securely so that they do not fall. Speakers, which are stacked, must be secured with securing straps. When laying the connecting cables, make sure that nobody can trip.

The stability of stacked systems (also valid for the use of stands and distance rods!) is contingent upon the following stability requirement. These conditions must, therefore, be guaranteed by the user:

Stacked systems may not fall over even if they are inclined by 10° in each direction. If this requirement is not fulfilled, then it is necessary to take steps to achieve compliance. Possible measures include strapping it to an appropriate base structure or fastening it using safety straps.

7.1 Proper Arrangement of the Loudspeakers

Be aware of the fact that the logical targeted alignment of this high quality speaker system can lead to a significant qualitative increase in the acoustic result. It is not possible to make generalities about the alignment of specific systems because the room has a substantial influence on the signal and the audible result.

As a rule, the mid- and high-transducers of loudspeakers should be mounted above the audience's face value, so that the sound distribution cannot be shadowed.

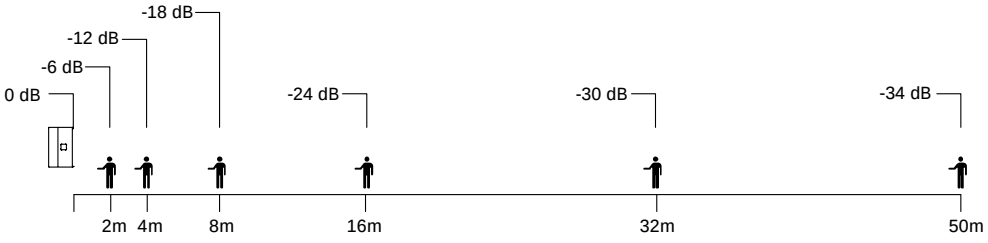
In many cases it is advisable to mount a loudspeaker higher, so that the sound will be distributed throughout the room more evenly. Low standing systems result in a greater difference in volume between front and back seats than higher standing systems.

Please note that this is only a general guideline and the best possible result may vary from room to room.

To simulate the correct alignment of the speakers beforehand, there are various programs such as ‘Ease’ or ‘Ulysses’. The Kling & Freitag speaker system data is available for download on our website www.kling-freitag.de.

The following graphics will assist in making a rough estimate as to the distance range of the CA 106. The graphics only take into consideration the sum of the direct sound and not the influence of the room. Because of this there can, in some cases, be noticeable deviation.

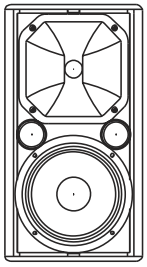
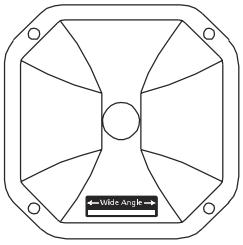
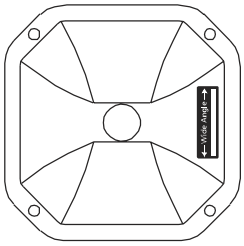
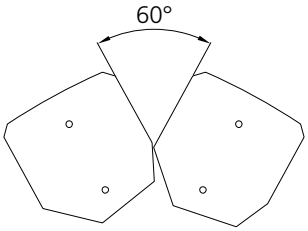
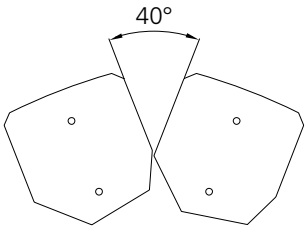
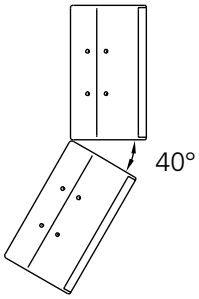
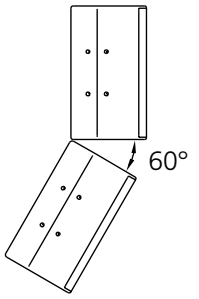
Distance range of SPL (direct sound level):



7.2 Arrayed Speaker Systems (Cluster)

If the loudspeakers are operated through the optional K&F C2 System Controller, we recommend turning on the 'Top Low Cut' switch for clustered operation. Thus the frequency response for this application can be optimised (see also K&F C2 User's Manual).

When operating the systems without the K&F C2 System Controller in a clustered configuration, the signal level of frequencies below 300 Hz should be reduced by 3-4 dB.

	 **Standing speaker**	 **Horn not rotated**	 **Horn rotated**
Recommended horizontal array configuration for extending the horizontal coverage angle, e.g. to cover a wide area			
Recommended vertical array configuration for extending the vertical coverage angle, e.g. for reaching balconies or increasing the sound pressure level when covering greater distances			

8. Wiring

The speaker is equipped with two parallel Speakon connectors.

Make sure that all units are switched off and all controls are turned down before connecting your CA 106 systems.

- We recommend the use of high-quality speaker cables provided by KLING & FREITAG.
- For connections to the power amplifier inputs, please use 2-pin shielded microphone cable with high-quality connectors.
- Avoid ground loops (see chapter 8.2)
- Please pay attention to the respective pin diagrams in this manual!
- Make sure that the +/- polarity of the speakers at the amplifier is correct. When simultaneously using power amplifiers from different manufacturers, be sure to use the correct specific pin configuration. It may be necessary to modify the pin configuration on the power amplifiers or on the connectors leading to them.
- Upon completing the wiring, ensure that the connected speaker channels are working in phase. To do so, use i.e. a phase checker. A phase error can also be recognized when the connected channels are used simultaneously. During simultaneous use the bass frequencies become notably quieter or the mid-frequencies such as voices cannot be located.
- To avoid loss of power, the cables should have a minimum wire gauge of 2.5 mm² - more for longer cabled distances. A minimum wire gauge can be easily calculated with the following formula:

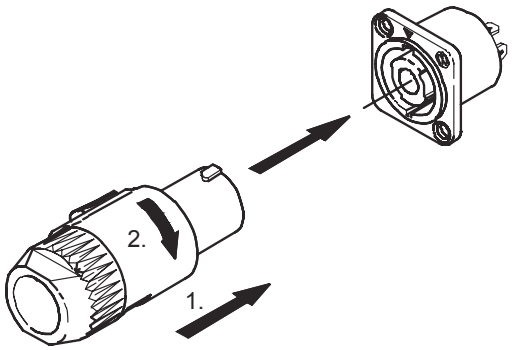
Important

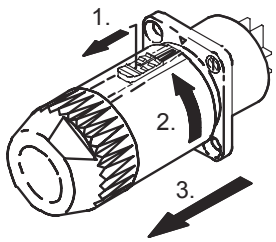
$$\text{Minimum Wire Gauge (mm}^2\text{)} = \frac{\text{Required Cable Length (m)}}{\text{2 x Speaker Impedance } (\Omega)}$$

If several loudspeakers are connected, the signal can be linked through from one loudspeaker to the next. Please make sure that the total impedance of the loudspeakers R(Ω) is not lower than the minimal impedance indicated on the power amplifier:

$$1/R_1 + 1/R_2 + 1/R_3 + \ldots = 1/R_{total}$$

8.1 Connecting the Speakon Connector to the Terminal





8.2 Avoiding Ground Loops

8.2.1 What is a Ground Loop?

Every component of a P.A. or Hi-Fi System has its own internal 0 V reference (ground). This point is often connected to the protective earth connector (PE / Ground). If two or more units are connected to one another with a line level audio cable, there may be a ground connection through the ground of the power supply cable (yellow-green) as well as through the shielding of the audio cable. The voltage difference between these two ground points causes audible interference to come from the speaker.

8.2.2 Avoiding Ground Loops

Important

If there is a loud humming or buzzing after the CA 106 System has been connected, then check that a "ground loop" has not been built into the system. Some power amplifiers and system controllers are equipped with a "Ground Lift" switch. Set these switches to the "Lift" position one after the other. If the noise is still audible, check if,

1. the noise is caused by a ground loop before the power amplifiers / controllers (e.g. mixing console, effects or equalizers).
2. the system or parts of the system are connected to an "unclean" power supply - meaning one, which is also running large motors, or lighting systems. An "unclean" supply voltage, electrostatic and electromagnetic fields can cause a malfunction.

Warning

Please observe the following basic rules:

- **Never!!! try to avoid a ground loop by disconnecting or taping the ground contact at the power connector! Extremely dangerous!**
- If possible, only use high-quality audio appliances with balanced signal outputs and with power cables with PE connectors.
- Use high-quality cables with good shielding.
- The point of ground for all connected components should merge at one central point. The power connections should lead out in a radial manner from one point and not be linked from one unit to the next.
- When installing appliances that create strong electrostatic or electromagnetic fields (large transformers, switch-mode power supplies), maintain some distance from other audio appliances. In extreme cases, the only solution is to create a completely independent 'audio ground'; in other cases, it is sufficient to connect a filter in front of the audio equipment.

9. Configurations and Connecting Diagrams

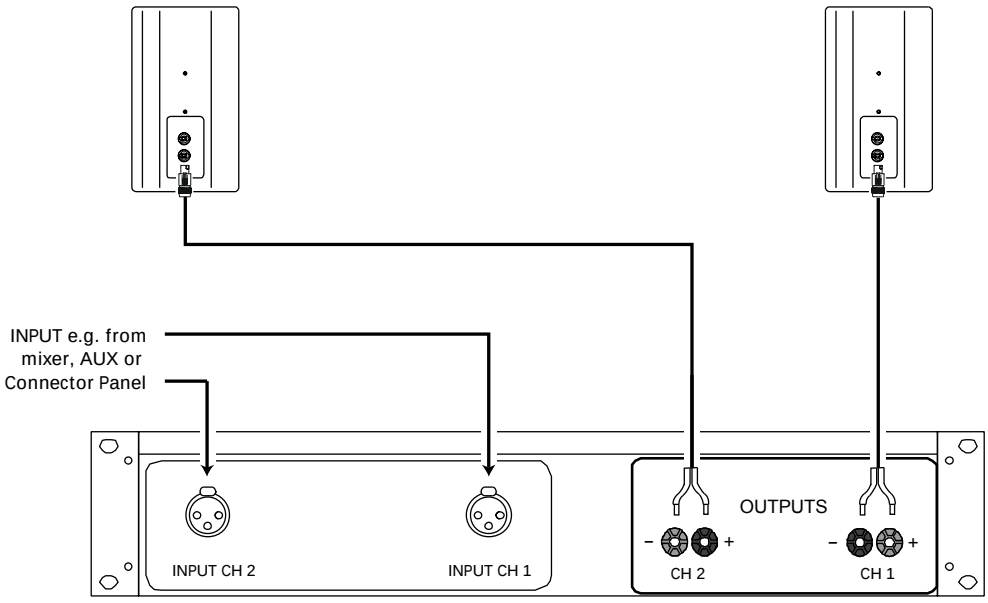
9.1 Operating the Systems without C2 Controller

The CA 106 systems can be used alone or in conjunction with a K&F subwoofer with integrated crossover (e.g. SW 112-XO / SW 115D-XO / SW 115E - XO or SW 118E-XO). In this mode of operation the crossover limits the subwoofer's frequency range.

- To protect the speakers from being destroyed and to avoid fire hazard, they should only be operated with professional power amplifiers with the following specifications:
  - integrated or preceding subsonic filter (approx. 20 Hz, min. 12 dB / octave)
  - integrated clipping limiter
  - maximum rated power 250W@16 Ohms (equivalent 1000W@4 Ohms)
- If you wish to use a speaker with a power amplifier which does not fulfil these specifications, then the speaker should be controlled using a Kling & Freitag system controller with limiter function. This is the only way overloading and that the risk of fire can be avoided. The results of such a power amplifier defect of cannot be avoided by the controller.

9.1.1 CA 106 Systems in Full-Range Mode

This mode of operation is ideal for speech applications and music applications without the need for a high bass content. Should more bass be needed, the bass level can be increased between 50 and 80 Hz at the mixing console.



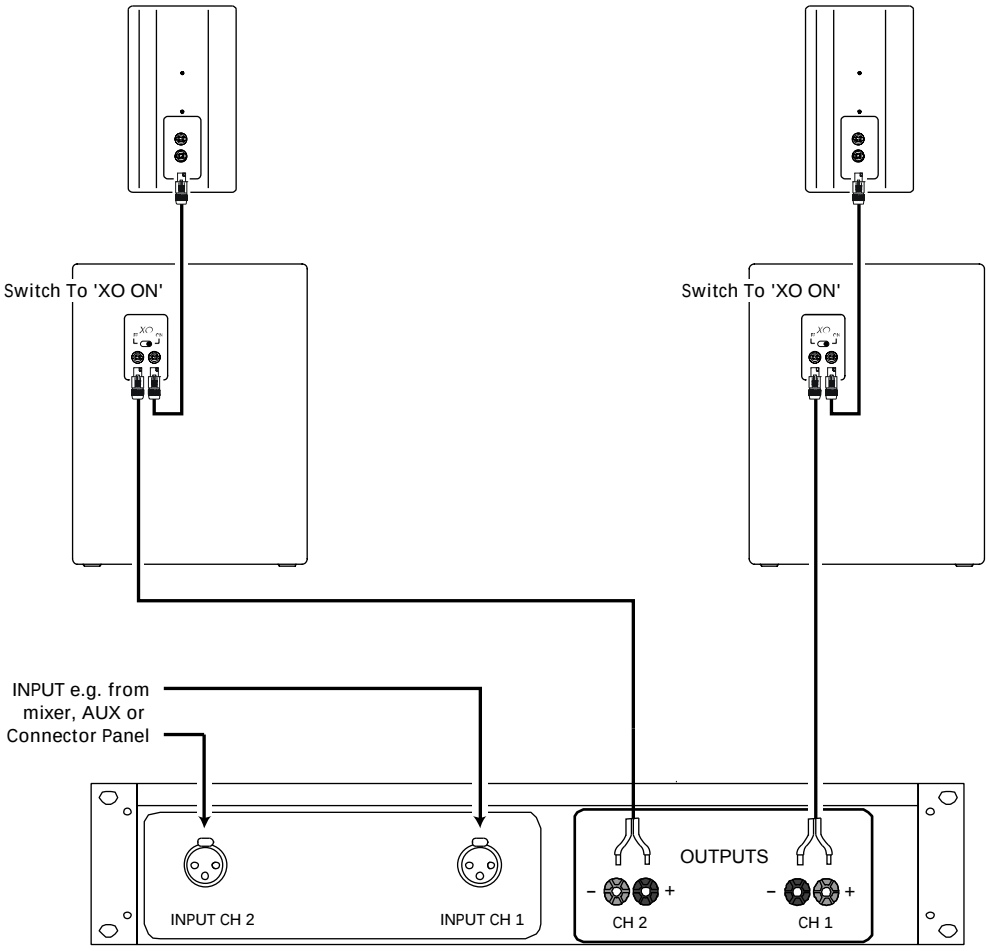
If you are operating a mid-high system in a cluster (speakers arranged in close proximity) or as a stage monitor, reduce the frequencies below 300 Hz by 3-4 dB! (The K&F C2 Controller has a special filter for this purpose, which can be activated with the 'Top-Low Cut' switch.)

9.1.2 Full Range Mode & Subwoofer with Crossover (XO)

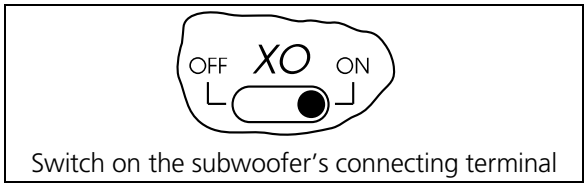
In this mode of operation you can easily realise applications, where a higher bass level is needed.

Recommended combinations of CA Systems, as described here, with K&F subwoofers:

2 CA 106 systems: 1 - 2 x SW 112-XO
2 - 4 CA 106 systems: 1 x SW 115D-XO
2 - 4 CA 106 systems: 1 x SW 115E-XO
2 - 4 CA 106 systems: 1 x SW 118E-XO



The switch 'XO' on the connecting terminal of the subwoofer must be at 'XO ON' for this mode of operation:



Switch on the subwoofer's connecting terminal

When using the CA 106 systems in a cluster (speakers in close proximity), reduce the frequencies below 300 Hz by 3-4 dB. (The K&F C2 Controller is equipped with a special filter for this purpose, which can be activated by pressing the "Top-Low Cut" switch.)

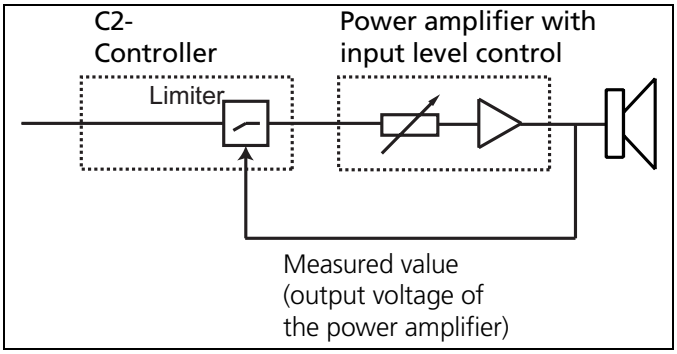
9.2 Operations with C2 Controller

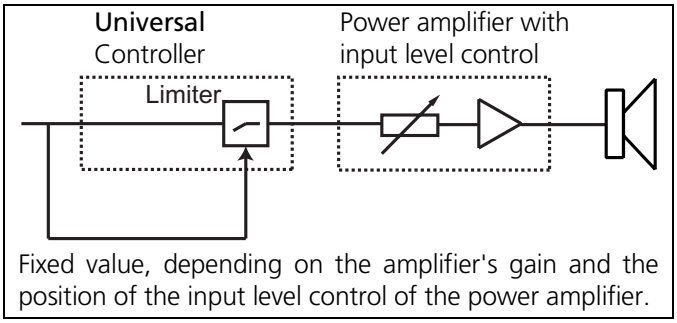
By using carefully adjusted filters (EQ) on special system cards for the CA systems, the C2 Controller optimises feedback prevention and the frequency response of the speakers.

The controller provides optional bass boost in full-range mode, optimisation for cluster operation (Top-Low Cut switch), high boost and sub-mono function.

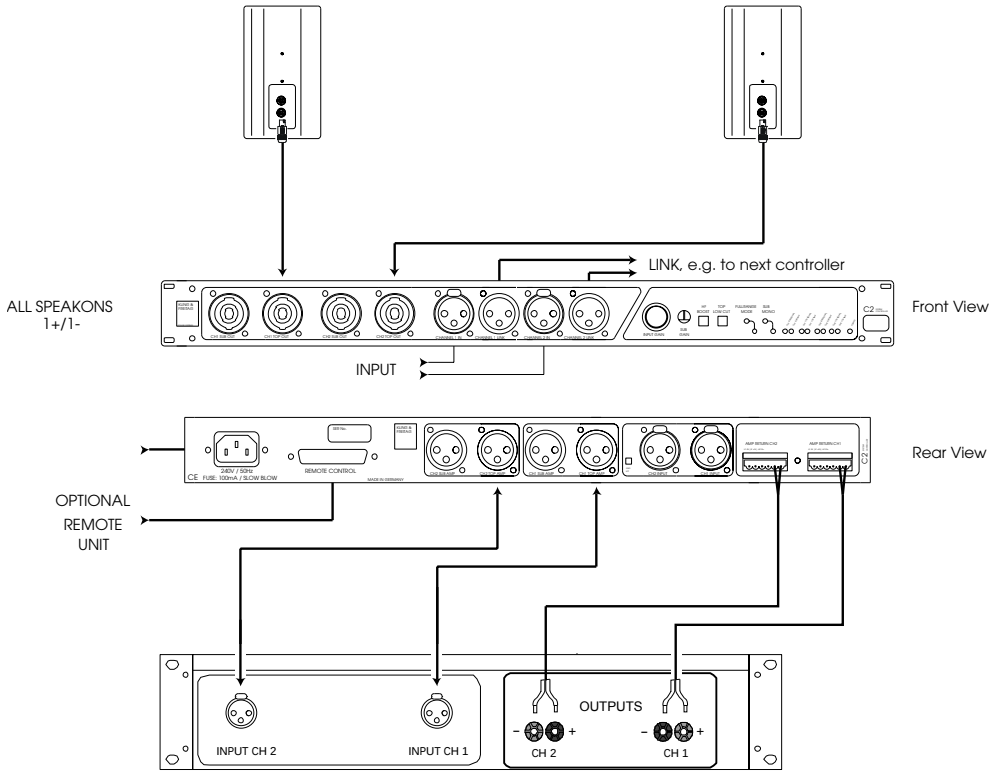
The C2 Controller optimises the operating safety of the speakers and power amplifiers by using special peak and RMS limiters in Sense Technology:

With other (universal) controllers, the gain of the selected power amplifiers must be known. The limiter on the C2 Controller, on the other hand, uses a special control circuit to determine the actual output voltage of the power amplifiers. The limiter then reduces the input level only when the power amplifier actually provides more power than the speakers can handle. The amplifier's gain and the position of the input level control for the power amplifiers are insignificant for the limiter function of the C2 Controller.




Universal
Controller
Power amplifier with
input level control
Limiter
Fixed value, depending on the amplifier's gain and the position of the input level control of the power amplifier.

9.2.1 Full-Range Mode with K&F C2 Controller



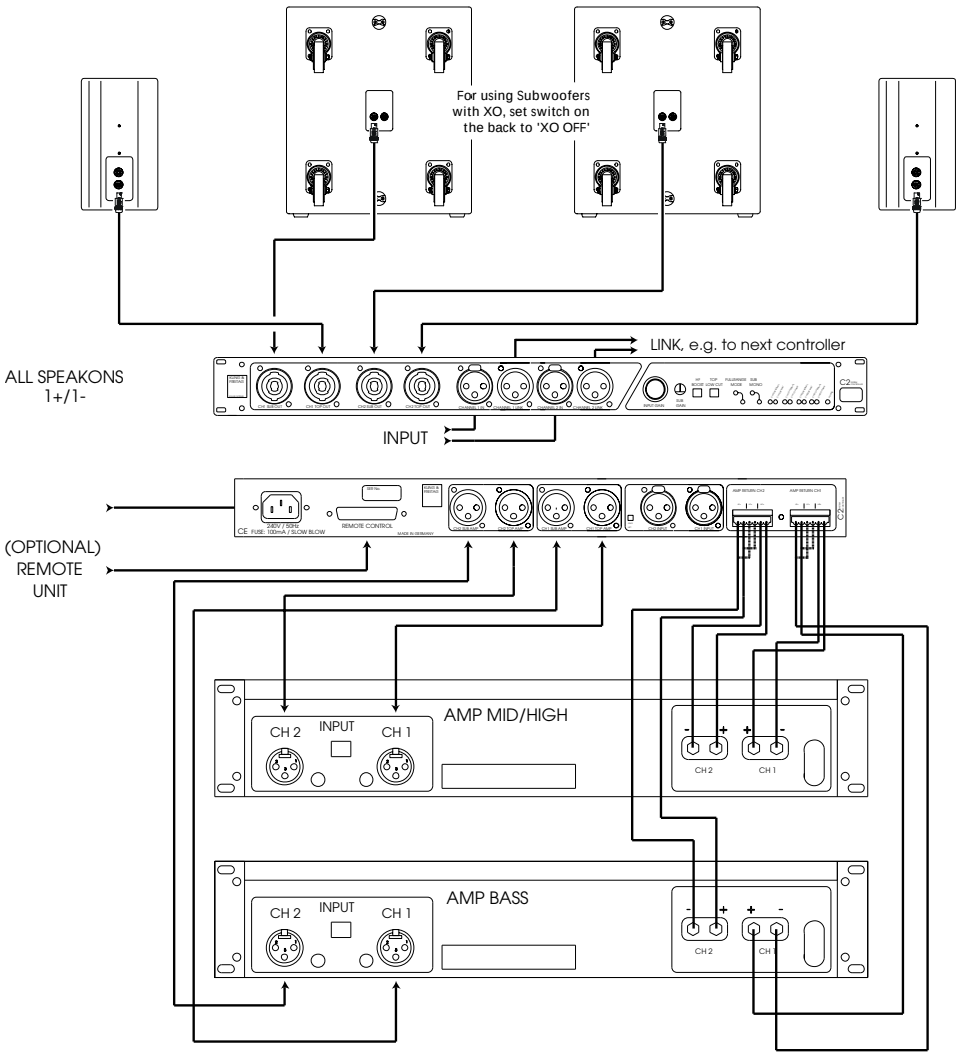
The countersunk switch 'Full-Range Mode' on the C2 Controller should be pressed and the LED assigned to it should light up. The full-range switch accentuates the bass frequencies of the mid-high systems, giving a more balanced sound to music programmes.

When using the mid-high systems in a cluster (speakers in close proximity) or as a stage monitor, activate the "Top-Low Cut" switch on the C2 Controller.

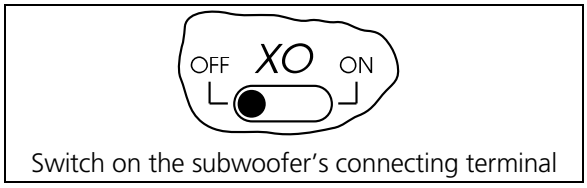
9.2.2 CA 106 & Bass with Controller C2 in 2-Way Active Mode

Recommended combinations of CA 106 Systems with K&F subwoofers in 2-way active mode with C2 Controller:

2-4 x CA 106 via C2 Controller with 1-2 x SW(i) 112 or 1 x SW(i) 115D - XO
or 1 x SW(i) 115E - XO or 1 x SW(i) 118E - XO



The switch 'XO' on the connecting terminal of the subwoofer must be at 'XO OFF' for this mode of operation:



Switch on the subwoofer's connecting terminal

Note for the full-range mode:

The countersunk switch 'Full-Range Mode' on the C2 Controller should not be pressed and the LED assigned to it should not light up.

Note for clustered configurations:

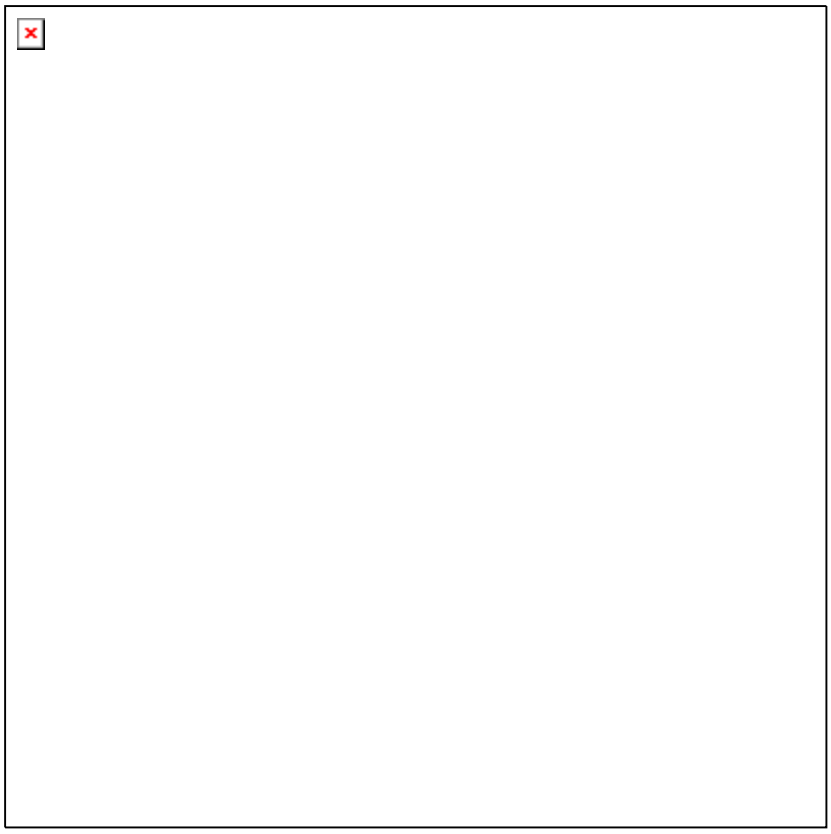
When using the CA 106 systems in a cluster (speakers in close proximity), activate the 'Top Low Cut' switch on the C2 Controller.

10. Operating the Speakers

Important

- Switch off all equipment and turn down all level controls.
- Wire the CA 106 systems according to the wiring diagrams as shown before.
- Upon completing the wiring, ensure that the connected speaker channels are working in phase. To do so, use i.e. a phase checker. A phase error can also be recognized when the connected channels are used simultaneously. During simultaneous use the bass frequencies become notably quieter or the mid-frequencies such as voices cannot be located.
- Now switch on the peripheral equipment first (mixing console, effects etc.), followed by the C2 Controller, if used, and the power amplifiers. Always use the before mentioned switching order. Otherwise switching noises may damage the system.
- If there is interference, turn off all appliances in the reverse order and check all cable connections (see chapter 8.2).
- Next, turn on the C2 Controller, if used, and the other peripheral equipment and make sure there is no interference.
- Now put a low level signal into the system and check for the correct function of the system. In doing so, all amplifier input controls need to be turned off again. Now turn on the control for the left CA 106 system and check that the correct signal is coming out of the CA 106 system.
- With C2 Controller: The Sense LED for the top speaker (i.e. CH 1 TOP signal) of the C2 Controller will light up green at a level of at ca. -40dB. The other channels of the system are checked in the same way. If the wrong LED lights up or a wrong (i.e., in 2-way active mode, low signal from a high frequency speaker) or distorted signal occurs, then there is a mistake in the wiring.
- Your system should now be ready for operation.
- Turning down the input level controls may not always prevent distortions in the input section of the power amplifier, especially if this section has a relatively low headroom. A clipping signal may not be displayed by the clipping indicator then. To prevent signal interruptions or damages to the speakers, turn the level controls of the power amplifier to the maximum position, if possible. The output level of the mixing console or the controller should be set to a level that doesn't overload the power amplifiers.
- When turning off the system, the input controls for the power amplifiers should be turned down first followed by the power switches of the amplifiers. After that, the other appliances can be turned off.
- The crossovers of the CA 106 systems are equipped with protection circuits for the high frequency driver and the crossover itself. These circuits cut off the signal current when highly overloaded. If the high speaker turns off, reduce the volume. After a few seconds, it will turn back on automatically.

11. Crossover: Wiring Diagram CA 106



Pin assignment Speakon NL4				
	+	-	/	/
'IN'	1+	1-	2+	2-
'OUT'	parallel with 'IN'			

12. Touching Up Damage to Paint / Changing the Front Foam

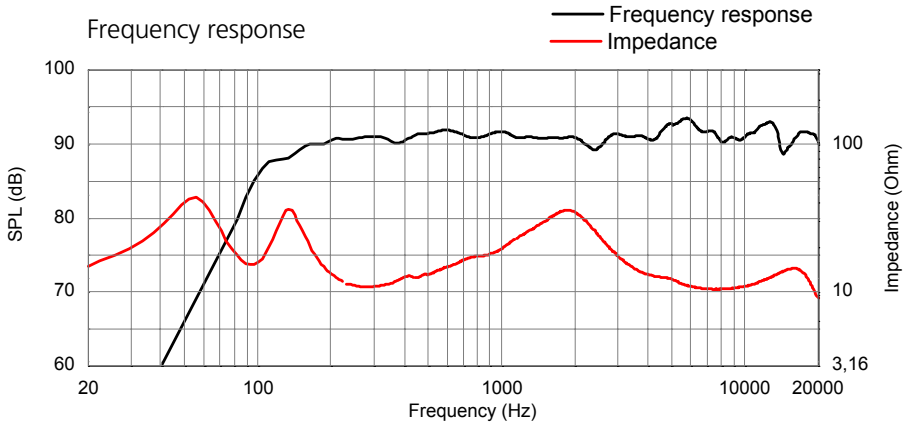
Although the PU structured paint used by KLING & FREITAG is impact proof and extremely resistant, we recommend using protective coverings or cases to help avoid damaging the paint during i.e. continuous mobile use. If paint damage occurs despite these precautions, it can be touched up by using commercial acrylic paint in the appropriate RAL colour of the speaker.

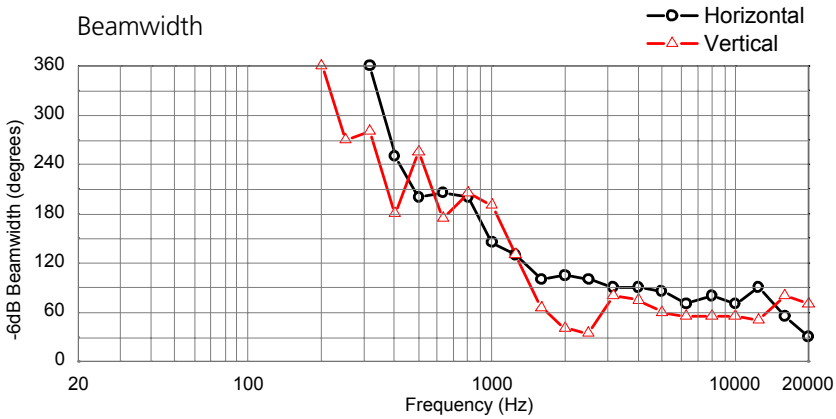
To replace the filter foam, send the front grille incl. foam to KLING & FREITAG GmbH. Upon payment for expenses, the grille with the new covering will be returned.

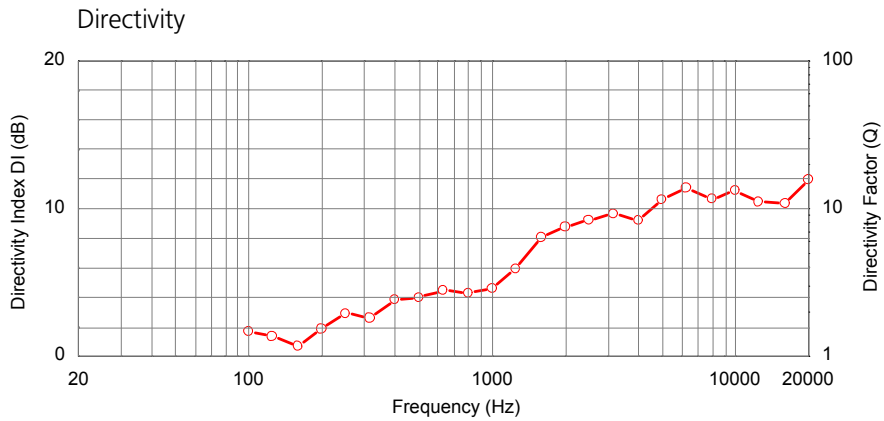
13. Technical Specifications

Loudspeaker	
Design	2-way passive system, bass reflex tuning
Frequency range -10 dB	78 Hz - 22 kHz
Frequency range ±3 dB	88 Hz - 20 kHz
Coverage angles (nominal)	90° x 60° (hor. x vert.)
Directivity index (DI)	10 (+1.5/-2) 1.5 kHz - 15 kHz
Power handling (nominal)	120 W
SPL 2.83 V / 1m	92 dB
Max. SPL	118 dB (SPL peak / 1 m)
Components	6.5'' low-mid chassis
	1'' high frequency driver on rotatable
	90° x 60° CD-horn
Crossover	1.8 kHz / octave, self-resetting
	protection circuit for 6.5" and
	1" chassis
Impedance (nominal)	16 Ω,
Connectors	2 x Speakon NL4MP (1+ / 1-)
Enclosure	
	Multifunctional enclosure with monitor and
	cluster angles, 12 mm Finnish birch Multiplex
	with highly resistant black or white structured
	paint (PU)
	2 x M6 and 8 x M8 thread inserts,
	ball proof front grille with exchangeable
	black or grey (white) acoustic foam
Dimensions (W x H x D)	195 x 365 x 206.5 mm
Weight	7 kg
Options	'100 Volt with 50/100/150 VA
	toroidal transformer (8.7 kg)'
	'terminal clamp instead of Speakon connector'
	Shielded Light', magnetically shielded,
	lightweight version (5.4 kg),
	'Outdoor Mobile'
	'Special finish in RAL colours'
Accessories	see catalogue or visit www.kling-freitag.de

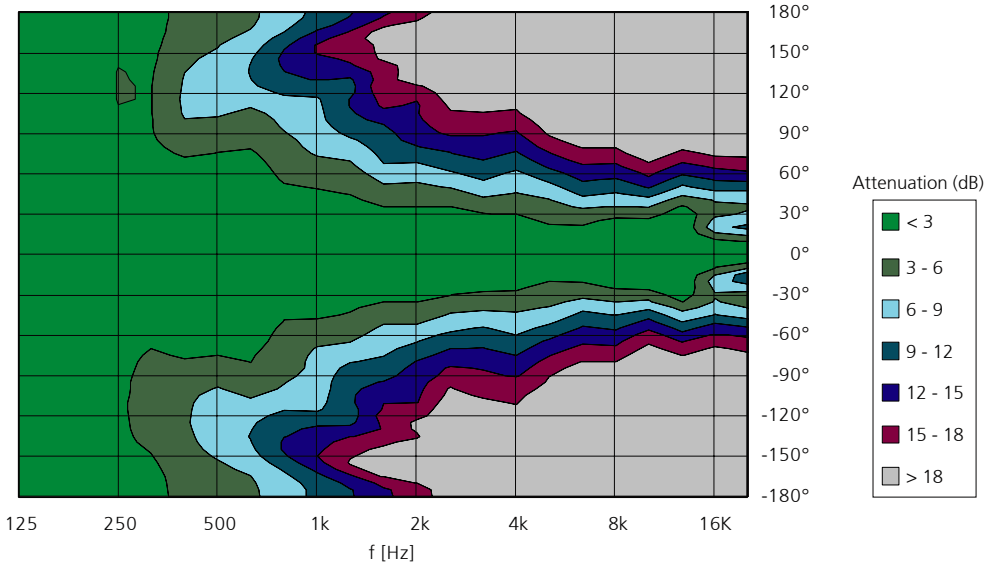
14. Measuring Charts



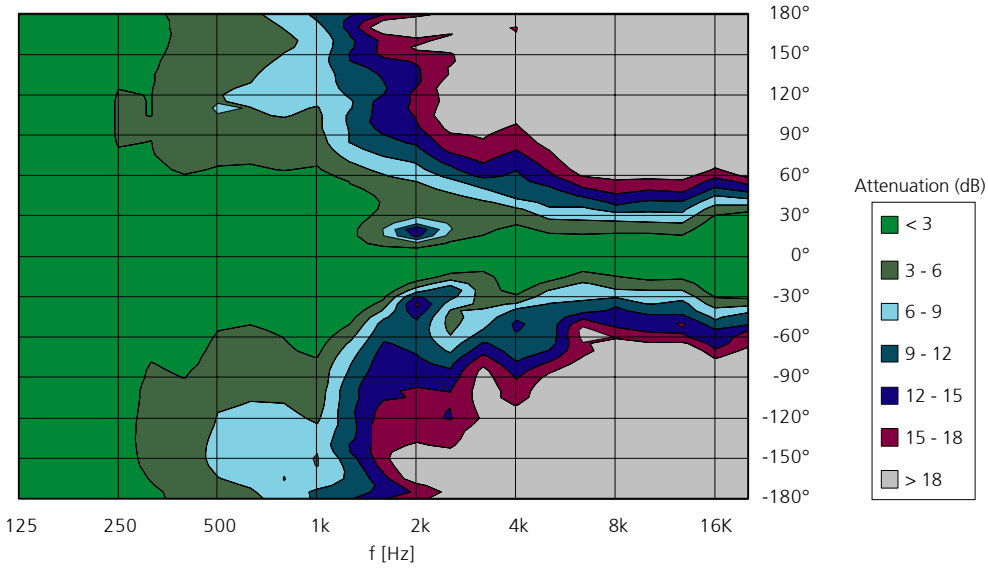




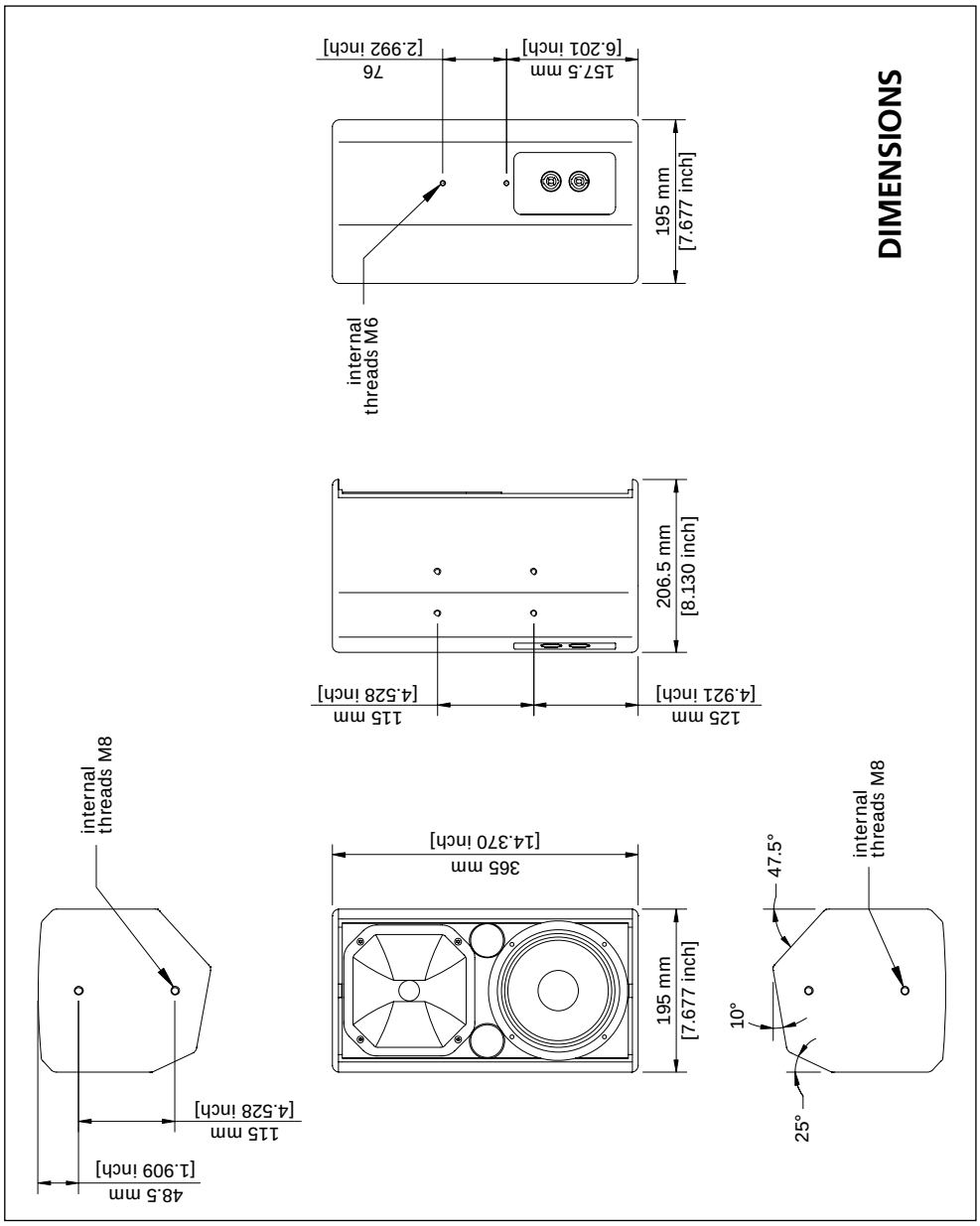
Horizontal coverage



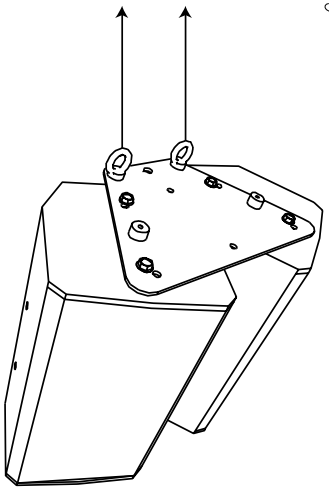
Vertical coverage



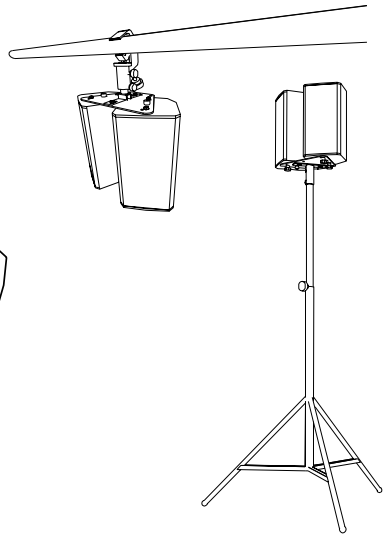
15. Dimensions



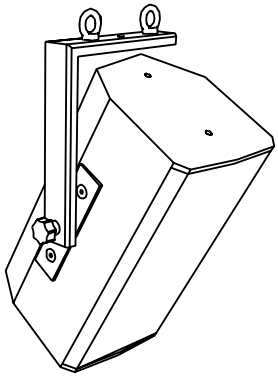
16. Accessories



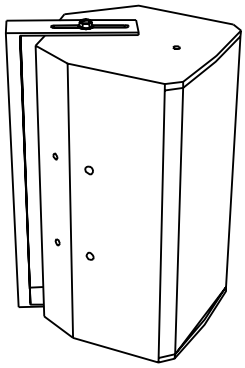
CA 106 cluster plate



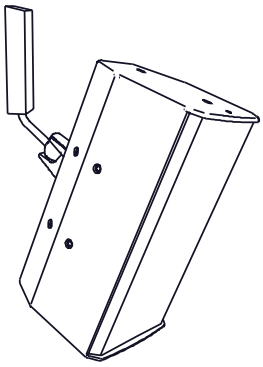
Application example for CA 106 plate



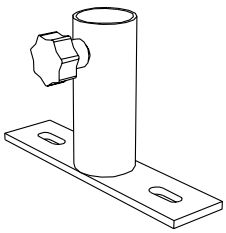
Adjustable speaker mount CA 106



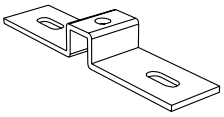
U-mount wall / ceiling bracket CA 106



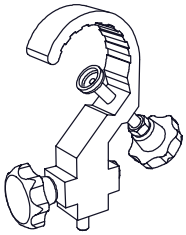
Wall and ceiling mount 'Omnimount'



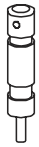
mounting adapter



TV-spigot adapter



Pipe Clamp



TV-spigot

Eyebolt M8 x 20

Further information is available at: www.kling-freitag.de

17. Regulations for Disposal

17.1 Germany:

It is not allowed to dispose of used electrical equipment as domestic waste.

But please do not dispose of them at official collecting points for recycling either!

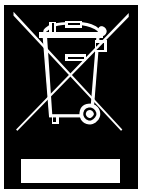
All Kling & Freitag products are plain business-to-business (B2B) products. Disposal of Kling & Freitag products labelled with a waste bin sign have thus to be disposed of by Kling & Freitag alone. Please call Kling & Freitag at the number stated below if you have a Kling & Freitag product to be disposed. We will offer you a straightforward and professional disposal not affecting costs.

If there is no dustbin sign on one of your Kling & Freitag products, because they have been sold before March 2006 then by law the owner is in charge of the disposal. For these we will be happy to assist and offer you proper ways of disposal.

Telephone number to call about the disposal of used Kling & Freitag products: +49 (511)-96 99 7-0

Explanation:

With the ElektroG (law relating to electrical and electronic equipment and appliances) we have complied with the EU-directive on waste electrical and electronic equipment (WEEE, 2002/96/EC)



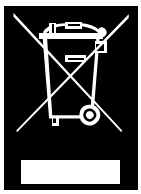
The Kling & Freitag AG has thus labelled all products mentioned in the WEEE from 03/24/2006 onwards with a sign with a crossed out waste bin and a white bar below. This sign indicates that the disposal into the domestic waste is prohibited and that the product has been put into circulation at the 03/24/2006 earliest.

The Kling & Freitag GmbH has been legally registered as a manufacturer with the registration office EAR. Our WEEE Registration-Nr. is: DE64110372

For the German Registration office EAR we have accredited that our products are sole B2B products.

17.2 EU, Norway, Island, and Liechtenstein (not Germany):

It is not allowed to dispose of used electrical equipment as domestic waste.



The Kling & Freitag AG has thus labelled all products coming from EU-Member countries as well as Norway, Island and Liechtenstein (except Germany) mentioned in the WEEE from 08/13/2005 onwards with a sign with a crossed out waste bin and a white bar below. This sign indicates that the disposal into the domestic waste is prohibited and that the product has been put into circulation at the 08/13/2005 earliest.

Unfortunately the European directive WEEE has been complied with implementing different national provisions of law throughout all member countries, which makes it impossible for us to offer consistent solutions for the disposal throughout Europe.

Responsible for complying with these provisions of law is the local distributor (importer) of each country.

For proper disposition of used products in accordance with these local provisions in the mentioned countries of the European Union (except Germany) please ask your local dealer or the local authorities.

17.3 Other countries

For proper disposition of used products in accordance with local provisions in other countries please ask your local dealer or the local authorities.